

FIG. 1 WIRELESS ACCESS REFERENCE MODEL

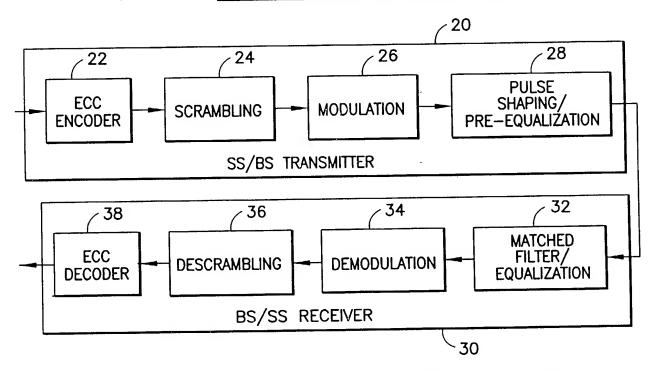
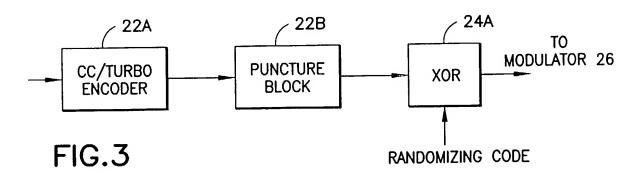


FIG.2 PHY REFERENCE MODEL SHOWING DATA FLOW



	MODULATI	MODULATION AND CHANNEL CODING	91
Parameter	QPSK w/R=4/5 CODING (1.6 BITS/SYM)	16-QAM w/R=4/5 CODING (3.2 BITS/SYM)	64-QAM w/R=4/5 CODING (4.8 BITS/SYM)
RF CHANNEL BANDWIDTH	3.5 MHz	3.5 MHz	3.5 MHz
CHIP RATE	2.56 Mcps	2.56 Mcps	2.56 Mcps
COMMUNICATION CHANNEL BANDWIDTH	4.096 Mbps	8.192 Mbps	12.288 Mbps
PEAK DATA RATE	4.096 Mbps	8.192 Mbps	12.288 Mbps
CDMA CHANNEL BANDWIDTH (SF=1)	4.096 Mbps	8.192 Mbps	12.288 Mbps
CDMA CHANNEL BANDWIDTH (SF=16)	256 kbps	512 kbps	768 kbps
CDMA CHANNEL BANDWIDTH (SF=128)	32 kbps	64 kbps	96 kbps
MODULATION FACTOR	1.17 bps/Hz	2.34 bps/Hz	3.511 bps/Hz
MODULATION FACTOR	1.1/ pps/Hz	7.34 Ups/ nz	

FIG. 4 HYPOTHETICAL PARAMETERS FOR A 3.5 MHz RF CHANNELIZATION

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64 QAM	MODULATION FACTOR	3.511	7.022	14.044	28.088	56.176
	AGGREGATE CAPACITY (Mbps)	12.288	24.576	49.152	98.304	196.608
16 QAM	MODULATION FACTOR	2.34	4.68	9.36	18.72	37.44
	AGGREGATE CAPACITY (Mbps)	8.192	16.384	32.768	65.536	131.072
QPSK	MODULATION FACTOR	1.17	2.34	4.68	9.36	18.72
	AGGREGATE CAPACITY (Mbps)	4.096	8.192	16.384	32.768	65.536
	NUMBER OF ELEMENTS	-	2	4	8	16

FIG.5 AGGREGATE CAPACITY AND MODULATION FACTORS VERSUS MODULATION TYPE AND ARRAY SIZE

$$H_{4} = \begin{bmatrix} +1 & +1 & +1 & +1 \\ +1 & -1 & +1 & -1 \\ +1 & +1 & -1 & -1 \\ +1 & -1 & -1 & +1 \end{bmatrix} = \begin{bmatrix} h_{1} \\ h_{2} \\ h_{3} \\ h_{4} \end{bmatrix}$$

FIG.6A

FIG.6B

$$H_{8x8} = \begin{bmatrix} +1 & +1 & +1 & +1 & +1 & +1 & +1 \\ +1 & -1 & +1 & -1 & +1 & -1 & +1 & -1 \\ +1 & +1 & -1 & -1 & +1 & +1 & -1 & -1 \\ +1 & +1 & -1 & -1 & +1 & +1 & -1 & +1 \\ +1 & +1 & +1 & +1 & -1 & -1 & -1 & +1 \\ +1 & +1 & -1 & -1 & -1 & +1 & +1 \\ +1 & -1 & -1 & +1 & -1 & +1 & +1 \\ +1 & -1 & -1 & +1 & -1 & +1 & +1 \end{bmatrix}$$

FIG.6C

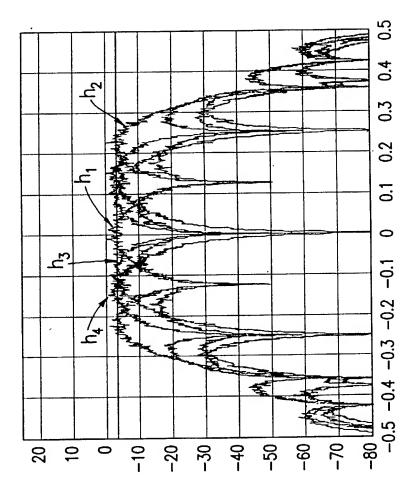


FIG.7A

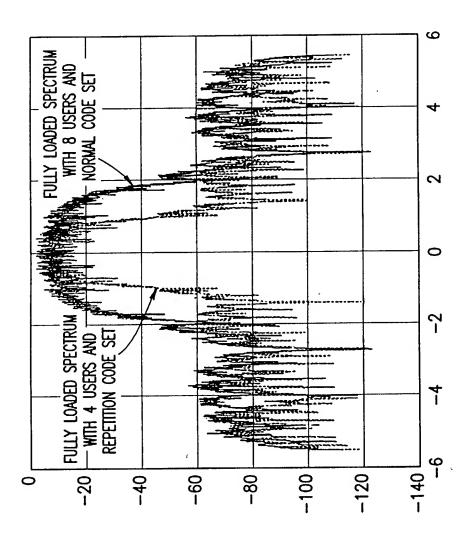


FIG.7B

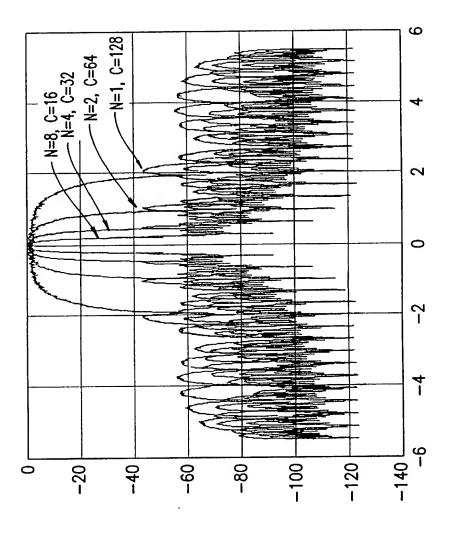


FIG.7C

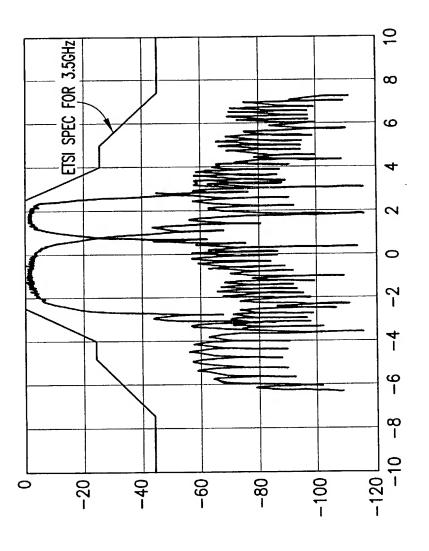


FIG.7D

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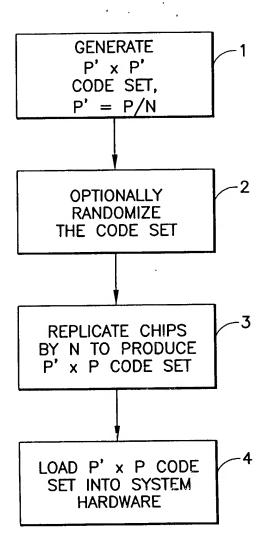


FIG.8